# Application for a Locally Adopted Energy Standards by the City and County of San Francisco In Accordance With Section 10-106 of the California Code of Regulations, Title 24, Part 1

Revised May 26, 2009

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## 1.0 Executive Summary

The City and County of San Francisco approved and adopted its Green Building Ordinance on August 4, 2008 which was approved by the California Energy Commission on September 24, 2008; and became effective on November 3, 2008. This application to the Energy Commission is in support of a Resolution approved by the City and County of San Francisco, and signed by the Mayor, on May 15th , 2009. The Resolution effectively revises the original ordinance only by referencing the 2008 Building Energy Efficiency Standards which take effect on August 1, 2009. A copy of the Resolution and the original Ordinance are included in Section 4 of this document.

***Overview of Revised Ordinance***

| | |
|---|---|
| **New ordinance or revision to previous ordinance?** | **Revised Ordinance** |
| **Projected Effective Date:** | **August 1, 2009** |
| **Green building or stand-alone energy ordinance?** | **Green Building Ordinance** |
| **Do minimum energy requirements increase after initial effective date?** | **Yes** |
| **Occupancies covered?** | **Low-Rise and High-rise Residential, Nonresidential** |
| **Energy requirements apply to new construction, additions, alterations?** | **New Construction and Additions** |
| **Special or unusual energy requirements?** | **No** |
| **Third party verification?** | **GreenPoint Rater & LEED AP** |
| **Implementation details in the ordinance or in a separate document?** | **Separate Implementation Guidelines** |

***The City and County of San Francisco has formally communicated to its Department of Building Inspection staff that it support and properly enforce the 2008 Building Energy Efficiency Standards (Title 24 Parts 1 through 6).***

The main features of the original Ordinance are summarized in the table below:

| Occupancy Type | General Requirements | Minimum Energy Requirement |
|---|---|---|
| "Small Residential" 4 or fewer apartments and < 75' height | Starting 8/1/09: 25 pts. 2009 GPR | No energy requirement |
| | Starting 1/1/10: 50 pts. 2009 GPR | 15% Better-than-Title 24 |
| | Starting 1/1/12: 75 pts. 2009 GPR | 15% Better-than-Title 24 |
| "Mid-size Multifamily Residential": 5+ apartments and < 75' Height | Starting 8/1/09: 25 pts. 2009 GPR | No energy requirement |
| | Starting 1/1/10: 50 pts. 2009 GPR | 15% Better-than-Title 24 |
| | Starting 1/1/12: 75 pts. 2009 GPR | 15% Better-than-Title 24 |
| "High-rise Residential": = or > 75' Height | Starting 8/1/09: LEED Certified | LEED v3.0: minimum 10% better-than-baseline ECB Method; or 15% better-than-baseline using T24 TDV Energy |
| | Starting 1/1/10: LEED Silver | |
| "Mid-size Commercial": > 5,000 sf and < 25,000 sf and < 75' height | Starting 8/1/09: LEED Checklist | No energy requirement: LEED energy points may be used to achieve the E&A Credit |
| | Starting 1/1/10: 5 LEED Credits | |
| | Starting 1/1/11: 6 LEED Credits | |
| | Starting 1/1/12: 7 LEED Credits & on-site renewable or purchase of green energy credits | |
| "New Large Commercial Buildings": > 25,000 sf | Starting 8/1/09: LEED Certified | LEED v3.0: minimum 10% better-than-baseline ECB Method; or 15% better-than-baseline using T24 TDV Energy |
| | Starting 1/1/10: LEED Silver | |
| | Starting 1/1/12: LEED Gold & on-site renewable or purchase of green energy credits | |
| "New Large Commercial Interiors and Major Alterations": > 25,000 sf | Starting 8/1/09: LEED Certified | No energy requirement |
| | Starting 1/1/10: LEED Silver | No energy requirement |
| | Starting 1/1/12: LEED Gold | No energy requirement |

*Note: Permit applicant must follow LEED rules using the appropriate ASHRAE 90.1 or Title 24 baseline and the Energy Cost Budget (ECB) Method; or exceed Title 24 TDV energy by 15% excluding process and receptacle energy use components in the %-better-than calculation.*

## 2.0 Impacts of the New Ordinance Under the 2008 Title 24 Standards

The energy performance impacts of the Ordinance have been evaluated using five case studies which collectively reflect the broad range of building types covered by the Ordinance.

- Single family house: 2-story 2,025 sf
- Low-rise multi-family: 3-story 8,442 sf, 8 dwelling units
- High-rise residential: 5-story 36,800 sf, 40 dwelling units
- Nonresidential: 5-story 52,900 sf, retail/office building

The methodology used in the case studies is based on the way that real buildings are designed and evaluated to meet or exceed the energy standards.

(a) Each prototype building design is tested for compliance with the 2008 Standards, and all energy measures are adjusted with common construction options to just barely meet the Standards. The energy measures chosen are a combination of measures which reflects how designers, builders and developers are likely to achieve a specified level of performance.

(b) Starting with a 2008 Standards minimally compliant set of measures, various items are changed to just reach the minimum energy performance required by the Ordinance (e.g, 15% better than 2008 Title 24). In this study, the design choices are based on many years of experience with architects, mechanical engineers and builders and general knowledge of the relative incremental costs of most measures. The intent of this approach is for the study to reflect how building energy performance is actually studied and used to select final energy measures.

(c) A minimum and maximum range of incremental costs of added energy measures is established by a variety of research means. A construction cost estimator, Building Advisory LLC, was contracted to conduct research and surveys to obtain accurate and current measure cost information. Site energy in KWh and Therms, is calculated for each run to establish the annual energy savings, energy cost savings and CO2-equivalent reductions in greenhouse gases.

## 2.1 Single Family House

The following measures were first evaluated so that the house design just meets the 2008 standards in Climate Zone #3:

**2,025 SF 2-story home** 2008 Title 24 Base Case, **20.2% total glazing** area:

- R-38 roof w/ radiant barrier
- R-13 exterior walls
- R-19 raised floor
- Dual vinyl windows, U=0.40, SHGC=0.40 w/ no overhangs
- Furnace: 80% AFUE; No Cooling
- R-6 ducts in the attic
- DHW: 50 gallon gas water heater, EF=0.62; no extra pipe insulation

**Single Family Energy Measures Needed to Meet the City's Ordinance**

The following energy features have been modified from the 2008 Title 24 set of measures so that the house design uses 15% less TDV energy than the corresponding 2008 Title 24 base case design. The incremental first cost to provide that measure in comparison with the equivalent base case measure is listed to the right.

The incremental energy improvements specified above to meet the proposed Ordinance requirements are variables selected by designer, builder or owner. There are a number of considerations in choosing the final mix of energy measures including first cost, aesthetics, maintenance and replacement.

**2,025 sq.ft. Home: Reduction in 2008 T24 TDV Energy by 15%**

| | |
|---|---|
| • 92% AFUE furnace | $ 500 - 1,200 |
| • Reduced duct leakage (installation testing & HERS inspection) | $ 300 - 600 |
| • House wrap: 2,550 sf @ $0.08 to $0.12/sf | $ 205 - 305 |
| **Total incremental cost of Ordinance energy measure:** | **$ 1,005 - 2,105** |
| **Incremental cost in $/sq.ft.:** | **$ 0.50 to 1.04 /sq.ft.** |
| | **Avg = $0.77 /sf** |

## 2.2 Low-rise Multi-family Building

The following measures were first evaluated so that the multi-family building just meets the 2008 standards in Climate Zone #3:

**8,442 SF 2-story building** 2008 Title 24 Base Case, **12.5% total glazing** area:

- R-38 roof w/ radiant barrier, R-13 exterior walls, slab-on-grade 1st floor
- Dual vinyl windows, U=0.39, SHGC=0.33 w/ no overhangs
- Furnace: 80% AFUE; No Cooling
- R-6 ducts in the attic
- DHW: 50 gallon gas water heater, EF=0.575; no extra pipe insulation

**Low-rise Multi-family Energy Measures Needed to Meet the City's Ordinance**

**8,442 sq.ft. Multi-family: Reduction in 2008 T24 TDV Energy by 15%**

| | |
|---|---|
| • Reduced duct leakage (installation testing & HERS inspection) | $ 2000 - 4000 |
| • R-15 wall insulation: 9,266 sf @ $0.06 to $0.08/ sf | $ 560 - 745 |
| • House wrap: 9,266 sf @ $0.08 to $0.12/sf | $ 745 - 1,115 |
| • (8) 92% AFUE furnaces | $ 4,000 - 9,600 |
| • R-49 roof/ceiling insulation, 2,880 sf @$0.19 - $0.22/sf | $ 550 - 635 |
| **Total incremental cost of Ordinance energy measure:** | **$ 7,855- 16,095** |
| **Incremental cost in $/sq.ft.:** | **$ 0.93 to 1.91 /sq.ft.** |
| | **Avg = $1.42 /sf** |

## 2.3 High-rise Residential Building

The following measures were first evaluated so that the high-rise residential building just meets the 2008 standards in Climate Zone #3:

**36,800 SF 5-story building** 2008 Title 24 Base Case, **35.2% Window Wall Ratio glazing** area, 40 dwelling units:

- R-30 attic insulation w/ cool roof Reflectance=0.30, Emittance=0.75
- R-19 in metal frame exterior walls
- Un-insulated (R-0) raised slab floor over parking garage;
- Dual vinyl NFRC-rated Low-E windows: U-factor=0.33, SHGC=0.30, (SHGC includes minimal exterior shading)
- Split heat pump for each dwelling unit: HSPF=7.2, EER=10.2
- Central domestic hot water boiler, 82.7% AFUE; re-circulating system w/ timer and temperature controls; variable speed drive hot water pump

**LEED vs. Title 24 Building Energy Performance**

LEED uses a very different metric than Title 24 in establishing a proposed building's energy performance with respect to the baseline energy performance. LEED v3.0 (2009) requires the use of the Energy Cost Budget (ECB) method to demonstrate that the annual energy cost of the proposed building is at least 10% less than the energy cost of the ASHRAE 90.1-2007 baseline reference building; or that the annual energy cost of the proposed building is 10% less than the annual energy cost of the Title 24 standard design version of the building, but including all site energy. In either case, all site energy is part of the LEED calculation of annual energy cost which includes exterior lighting, interior lighting (for high-rise residential), process loads and receptacle loads.

By comparison, the energy performance metric used by the 2008 Title 24 Building Energy Efficiency Standards is Time Dependent Valuation (TDV) Energy in KBtu/sf-yr. Process, receptacle and lighting loads are fixed in both the Standard Design and the Proposed Building within the Title 24 performance calculation. Preliminary results by Gabel Associates show that, based on variations in Climate Zone and building type, a nonresidential or high-rise residential building using 13% to 17% less TDV Energy than the 2008 Title 24 Standard Design has a projected annual energy cost approximately 10% less than the baseline building. San Francisco is providing permit applicants an optional method which demonstrates energy equivalence with the LEED minimum energy requirement: reducing TDV Energy use 15% below the 2008 Standard Deisgn Title 24 TDV Energy. In the %-Better-Than-Title 24 calculation, energy use components which are fixed within the compliance simulation and which the permit applicant cannot receive credit for reducing (i.e., receptacle loads, process loads, exterior lighting and, in high-rise residential, interior lighting) may be omitted. Build-It-Green's 2009 GreenPoint Rated System uses the same criteria for its minimum energy requirement for high-rise residential buildings. And this methodology has been used to establish the following cost-effectiveness data.

**High-rise Residential Energy Measures Needed to Meet the City's Ordinance**

**36,800 sq.ft. building: Reduction in 2008 T24 TDV Energy by 15%**

| | |
|---|---|
| • Super Low-E glazing: U=0.33, SHGC=0.23, 6,240 sf @ $1.35 - $1.50/sf | $ 8,425 - 9,360 |
| • R-3.5 (1") K-13 spray-on insulation under raised floor 9,200 sf @ $1.20 - $1.50/sf | $ 11,040 - 13,800 |
| • (2) Munchkin boilers @ $1200 - $2,000 additional each | $ 2,400 - 4,000 |
| • Heat pumps: HSPF=7.84 / EER=11.2 80 units @$150 - $250 each | $ 12,000 - 20,000 |
| **Total incremental cost of Ordinance energy measure:** | **$ 33,865 - 47,160** |
| **Incremental cost in $/sq.ft.:** | **$ 0.92 to 1.28 /sq.ft. Avg = $1.18 /sf** |

## 2.4 Nonresidential Building

The following measures were first evaluated so that the nonresidential building just meets the 2008 standards in Climate Zone #3:

**52,900 SF 5-story building** 2008 Title 24 Base Case, **32.5% Window Wall Ratio glazing** area:

- R-30 attic insulation, R-19 in metal frame exterior walls, slab-on-grade 1st floor;
- NFRC-rated Low-E windows: U-factor=0.50, SHGCc=0.38 (e.g., Viracon VE 1-2M) w/ no exterior shading
- Lighting = 0.887 w/sf: 720 2-lamp 4' T8 fixtures @ 62w each and 260 26w CFLs @ 26 w each; no lighting controls
- 4 identical Packaged VAV units: Aaron 25 ton, EER=10.4, 10,000 CFM, standard efficiency fan motors, 30% VAV boxes w/ reheat
- Ducts in conditioned space, R-4.2 duct insulation
- Hot water assumed to be standard gas water heater

**Nonresidential Energy Measures Needed to Meet the City's Ordinance**

Refer to "*LEED vs Title 24 Building Energy Performance*" above in subsection 2.3 for the basis of using 15%-Better-Than-Title 24 as roughly equivalent to the minimum energy requirements of LEED v3.0 (2009).

**52,900 sq.ft. building: Reduction in 2008 T24 TDV Energy by 15%**

| | |
|---|---|
| • 720 2-lamp 4' T8 fixtures with high efficiency instant start ballasts and premium T8 lamps, 50 input watts @$25.00 - $30.00/fixture; Installed LPD=0.803 | $ 18,000 - 21,600 |
| • 120 occupant sensors controlling (2) 2-lamp T8 fixtures; @$65.00 - $85.00 each | $ 7,800 - 10,200 |
| • 40 more recessed CFL fixtures, all CFL fixtures w/ 18w lamps @$175 - $250 each | $ 7,000 - 10,000 |
| • (5) Trane 25 ton units, EER=11.0 @ $9,000 to $13,000 each w/ premium fan motors | $ 45,000 - 65,000 |
| **Total incremental cost of Ordinance energy measure:** | **$ 77,800 - 106,800 Avg = $92,300** |
| **Incremental cost in $/sq.ft.:** | **$ 1.47 to $2.02/sq.ft. Avg = $1.74 /sf** |

## 3.0 Cost Effectiveness Under the 2008 Title 24 Standards

- Incremental site electricity (kWh) and natural gas (therms) saved per year as calculated using state-approved energy compliance software for the 2008 Building Energy Efficiency Standards, EnergyPro Version 5 and Micropas 8

- Average utility rates of $0.163/kWh for electricity and $1.30/therm for natural gas in current constant dollars

- The assumption of no change (i.e., no inflation or deflation) of utility rates in constant dollars over time

- The assumption of no increase in summer temperatures (though recent scientific studies suggest that global climate change will increase temperatures in the Western U.S. which in turn will increase air conditioning energy use)

Cost-effectiveness analysis of the Ordinance with respect to each building occupancy type and design assumes:

- No external cost of global climate change -- and corresponding value of additional investment in energy efficiency and CO2-e reduction – is included

- The cost of financing the incremental cost of energy measures is not included.

### 3.1 Single Family House

| Building Description | Average Incremental First Cost ($) | Net Incremental Annual Energy Cost Savings ($) | Simple Payback (years) |
|---|---|---|---|
| 2,025 sf (T24-15%) | $1,555 | $127 | 12.2 |

Annual Reduction in CO2-equivalent: 0.52 lbs./sq.ft.- year

### 3.2 Low-rise Residential Building

| Building Description | Average Incremental First Cost ($) | Net Incremental Annual Energy Cost Savings ($) | Simple Payback (years) |
|---|---|---|---|
| 8,442 sf (T24-15%) | $11,975 | $471 | 25.4 |

Annual Reduction in CO2-equivalent: 0.46 lbs./sq.ft.- year

### 3.3 High-rise Residential Building

| Building Description | Average Incremental First Cost ($) | Net Incremental Annual Energy Cost Savings ($) | Simple Payback (years) |
|---|---|---|---|
| 36,800 sf (T24-15%) | $40,513 | $1,838 | 22.0 |

Annual Reduction in CO2-equivalent: 0.18 lbs./sq.ft.- year

### 3.4 Nonresidential Building

| Building Description | Total Incremental First Cost ($) | Net Incremental Annual Energy Cost Savings ($) | Simple Payback (years) |
|---|---|---|---|
| 52,900 sf (A-15%) | $92,300 | $9,412 | 9.8 |

Annual Reduction in CO2-equivalent: 0.72 lbs./sq.ft.- year

## Conclusions

Regardless of the building occupancy type and number of stories, the incremental improvement in overall annual energy performance of buildings under the San Francisco Green Building Ordinance and the 2008 Title 24 Standards is cost-effective. Each building's specific design, occupancy type and design choices used to meet the state's energy code -- and then go beyond code to meet the Ordinance -- may allow for a large range of incremental first cost and payback. Any permit applicant complying with the energy requirements of the San Francisco Green Building Ordinance should carefully analyze building energy performance to reduce incremental first cost and reduce the payback for the required additional energy measures.

## 4.0 Text of the San Francisco Resolution and Original Ordinance

**RESOLUTION Re: GREEN BUILDING ORDINANCE**

*(following 5 pages)*

[Green Building Ordinance – Finding of Cost Effectiveness and Energy Savings.]

**Resolution adopting a finding by the Board of Supervisors, required by State law, that the City's Green Building Ordinance (Chapter 13C of the San Francisco Building Code) is cost effective and will save more energy than the 2008 California Building Efficiency Standards that will go into effect throughout the State of California on August 1, 2009, and directing the Department of Building Inspection or other appropriate City staff to cause the Green Building Ordinance, this resolution, and the supporting study to be transmitted to the California Energy Commission for its review and re-approval.**

WHEREAS, Section 25402.1(h)(2) of the California Public Resources Code authorizes a local jurisdiction to adopt and enforce more stringent local energy standards, provided that the local jurisdiction makes a determination that the local standards are cost effective and will save more energy than the current Statewide standards and files an application for approval with the California Energy Commission together with documentation supporting the cost-effectiveness determination; and,

WHEREAS, A local ordinance may take effect only after the California Energy Commission has reviewed and approved the proposed local energy standards; and,

WHEREAS, On July 29, 2008, this Board of Supervisors finally passed a Green Building Ordinance (Chapter 13C of the San Francisco Building Code), which was approved by the Mayor on August 4, 2008; and,

WHEREAS, The Green Building Ordinance imposed stricter local energy efficiency and other green building requirements than the 2005 California Building Efficiency Standards then in effect for new construction and major alterations in various types of buildings, which ranged from: (1) submitting a checklist, (2) achieving specific ratings and points under the LEED®,

Build It Green, or an equivalent rating system, (3) providing space for on-site compostable waste, (4) having water efficient landscaping, reducing water use, and managing stormwater, (5) managing construction waste, (6) providing renewable energy on-site, (7) using low-emitting materials, and (8) achieving enhanced commissioning; and,

WHEREAS, In its legislative findings, this Board expressly determined that the standards imposed by the Green Building Ordinance were cost effective and would save more energy than the 2005 California Building Energy Efficiency Standards then in effect; and,

WHEREAS, The Board's cost effectiveness and energy saving determination was based upon a study performed by Gabel Associates, LLC; and,

WHEREAS, The California Energy Commission approved the Green Building Ordinance and it went into effect on November 3, 2008; and,

WHEREAS, On April 23, 2008, the California Energy Commission adopted the 2008 California Building Energy Efficiency Standards that will go into effect throughout the State of California on August 1, 2009; and,

WHEREAS, Section 25402.1(h)(2) of the Public Resources Code requires this Board of Supervisors to make a determination that the City's Green Building Ordinance is more cost effective and will save more energy than the 2008 California Building Energy Efficiency Standards in order for the Green Building Ordinance to remain in effect after August 1, 2009; and,

WHEREAS, Gabel Associates, LLC has revised the previous study to compare the City's Green Building Ordinance with the 2008 California Building Energy Efficiency Standards that will go into effect on August 1, 2009, which revised study is on file with the Clerk of the Board of Supervisors in File No. 090469 and is hereby declared to be a part of this resolution as if set forth fully herein; and,

WHEREAS, No changes are being made to the City's Green Building Ordinance that the California Energy Commission previously approved; now, therefore, be it

RESOLVED, That this Board of Supervisors hereby finds and determines that the City's Green Building Ordinance, codified as Chapter 13C of the San Francisco Building Code, is cost effective and will save more energy than the 2008 California Building Energy Efficiency Standards that will go into effect on August 1, 2009; and, be it

FURTHER RESOLVED, That this determination is based upon the San Francisco Green Building Ordinance Revised Energy Cost-Effectiveness Study Under the 2008 Title 24 Standards prepared by Gabel Associates, LLC, which compares the City's Green Building Ordinance with the 2008 California Building Energy Efficiency Standards; and be it

FURTHER RESOLVED, That the Department of Building Inspection, or other appropriate City staff, is hereby directed to cause the City's Green Building Ordinance, this resolution, and the supporting study to be transmitted to the California Energy Commission with an application for its review and re-approval of the Green Building Ordinance so that the Ordinance will remain in effect after August 1, 2009.

City and County of San Francisco

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

# Tails

# Resolution

**File Number:** 090469 **Date Passed:**

Resolution adopting a finding by the Board of Supervisors, required by State law, that the City's Green Building Ordinance (Chapter 13C of the San Francisco Building Code) is cost effective and will save more energy than the 2008 California Building Efficiency Standards that will go into effect throughout the State of California on August 1, 2009, and directing the Department of Building Inspection or other appropriate City staff to cause the Green Building Ordinance, this resolution, and the supporting study to be transmitted to the California Energy Commission for its review and re-approval.

May 5, 2009 Board of Supervisors — ADOPTED

Ayes: 11 - Alioto-Pier, Avalos, Campos, Chiu, Chu, Daly, Dufty, Elsbernd, Mar, Maxwell, Mirkarimi

File No. 090469

**I hereby certify that the foregoing Resolution was ADOPTED on May 5, 2009 by the Board of Supervisors of the City and County of San Francisco.**

Angela Calvillo
Clerk of the Board

5/14/09
**Date Approved**

Mayor Gavin Newsom

**ORIGINAL GREEN BUILDING ORDINANCE APPROVED 8/4/08**

**Ordinance amending the San Francisco Building Code by adding Chapter 13C to impose green building requirements on (1) newly constructed Group R occupancy buildings, (2) newly constructed commercial buildings of Group B or M occupancies that are 5,000 gross square feet or more, (3) new first-time build-outs of commercial interiors that are 25,000 gross square feet or more in buildings of Group B or M occupancies, and (4) major alterations that are 25,000 gross square feet or more in existing buildings of Group B, M, or R occupancies, where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed; exempting (1) City projects, which are subject to Chapter 7 of the San Francisco Environment Code, (2) any new building in which laboratory use of any occupancy classification is the primary use, and (3) any building undergoing renovation in which the area of renovation will be primarily for laboratory use of any occupancy classification, and to authorize the Director of Building Inspection to grant an exemption from some of the requirements on the grounds of hardship or infeasibility and require the Director to grant an exemption if compliance would compromise the historical integrity of an historic structure; imposing additional requirements on demolitions and credits for the reuse of historic structures; providing that the requirements become operative 90 days after adoption if the California Energy Commission has approved it by that time; adopting findings, including environmental findings, findings required by California Health and Safety Code Section 17958.5, and California Energy Code findings; and directing the Clerk of the Board of Supervisors to forward this ordinance to the California Building Standards Commission upon final passage.**

Be it ordained by the People of the City and County of San Francisco:

Section 1. The Board of Supervisors of the City and County of San Francisco hereby finds and declares as follows:

(a) CEQA Findings. The Planning Department has determined that the actions contemplated in this Ordinance are in compliance with the California Environmental Quality Act (California Public Resources Code section 21000 et seq.). Said determination is on file with the Clerk of the Board of Supervisors in File No. _____ and is incorporated herein by reference.

(b) Findings Required by California Health & Safety Code Section 17958.5.

(i) San Francisco is located at the tip of a peninsula and is served by the electricity grid at a single point, the Martin Substation. This single point of service makes San Francisco uniquely vulnerable to supply disruptions. Making San Francisco's building stock more energy efficient will reduce San Francisco's energy consumption and decrease its vulnerability to supply disruptions.

(ii) The world's leading climate scientists have documented a clear global warming trend and the unmistakable impact of human activities on that trend. As a coastal city surrounded on three sides by water, San Francisco is extremely vulnerable to climate change caused by global warming and the associated rise in sea levels. Construction of more energy efficient buildings can help San Francisco reduce its share of the greenhouse gas emissions that are a significant contributor to global warming.

(iii) In 2002, in response to the global warming threat, the Board of Supervisors adopted unanimously Resolution No. 158-02, which, among other things, established for San Francisco a greenhouse gas emissions reduction target of 20 percent below 1990 levels by the year 2012 and called for continued actions toward achieving these goals.

In Resolution No. 158-02, the Board found that global warming and the associated rise in sea levels would be particularly devastating to San Francisco and that a Green Building Program, among other efforts, was a critical component in a local action plan for

climate protection. The Board further found that greenhouse gas reduction activities would contribute substantially to the achievement of many of the City's highest priority goals, including but not limited to: energy security and cost reduction, affordable housing, mobility and transportation choices, solid waste reduction and recycling, reliable and affordable water supply, urban and rural forest protection, sustainable economic development, and clean air.

(iv) In response to Board Resolution No. 158-02, San Francisco's Department of Environment and Public Utilities Commission published a Climate Action Plan for San Francisco in September 2004. The Plan states that in San Francisco, the impacts of climate change will be variable and widespread and identifies a number of specific serious impacts that global warming and the associated rise in sea levels would have on San Francisco's weather, water resources, physical landscape, ecosystem, human health, economy, and infrastructure.

(v) The City's Climate Action Plan found that energy use in buildings and facilities is responsible for approximately 50 percent of San Francisco's greenhouse gas emissions. In 1990, San Francisco's total energy consumption was about 5,000 gigawatt-hours of electricity and 300 million therms of natural gas. San Francisco's energy use resulted in a total of approximately 4.5 million tons of $CO_2$ emissions released into the atmosphere in 1990: 1.7 million tons of $CO_2$ was released by the City's 300,000 households, 1.5 million tons of $CO_2$ was released by the City's 32,000 businesses, 894,000 tons of $CO_2$ was released by the City's industrial sector, and 402,000 tons of $CO_2$ was released by the City's municipal buildings and facilities.

The Climate Action Plan states that the potential for $CO_2$ reductions through electricity and gas savings in San Francisco's buildings is tremendous and that key actions required to reach this potential include incorporating policies in both the private and public sectors such as designing new buildings beyond code and implementing

energy efficient retrofit projects in existing buildings. Reducing electricity demand means in-city power plants run less, creating fewer emissions.

(vi) As a participant in the Cities of Climate Protection campaign sponsored by the International Council on Local Environmental Initiatives, San Francisco has joined with more than 500 cities around the world to inventory its emissions of greenhouses gases, set reduction targets, and take action to meet those targets.

(vii) In recent years, green building design, construction and operational techniques have become increasingly widespread. Many homeowners, businesses and building professionals have voluntarily sought to incorporate green building techniques into their projects. A number of local and national systems have been developed to serve as guides to green building practices. At the national level, the U.S. Green Building Council, developer of the Leadership in Energy and Environmental Design (LEED®) Green Rating System and LEED® Reference Guide, has become a leader in promoting and guiding green building. At the local level, Build It Green and StopWaste.Org have developed residential green building standards appropriate for smaller projects, and which over twenty Bay Area cities and counties have employed.

(viii) Starting in 2004, San Francisco has enacted legislation or adopted programs to mandate or encourage the use of green building standards in San Francisco and to reduce the City's impacts on the environment.

In 2004, the City enacted Chapter 7 of the San Francisco Environment Code, which, among other things, requires all new City construction and major renovation projects to achieve a LEED® Silver certification from the US Green Building Council. In 2006, the City adopted Ordinance No. 27-06 mandating the recycling of construction and demolition debris.

In 2006, the City adopted two programs to encourage the use of green building standards in the private sector. First, the San Francisco Building and Planning Departments developed criteria to reduce the cost of solar permits and streamline the

permitting process. Solar permits now cost less than $90 and can be issued over the counter, without the delays of in-house reviews. The Department of Building Inspection has estimated that 90 percent of photovoltaic system applications meet the requirements for the streamlined permit process. Second, the San Francisco Department of Building Inspection, Planning Department, and Department of the Environment established a priority permitting process for LEED® Gold certified, or equivalent, building projects. Seventeen projects have presently been accepted.

(ix) In 2004, the City and County of San Francisco committed to the goals of diverting over 75 percent of its waste from landfill by the year 2010 and to achieve Zero Waste to landfill by 2020. These ambitious targets can only be realized through continued implementation and expansion of recycling and composting programs, increased construction and demolition debris recycling, and source reduction programs in the public and private sectors.

(x) In 2006, the State enacted the California Global Warming Solutions Act of 2006 (AB 32), which added Section 38501 et seq. to the California Health and Safety Code. This legislation requires, among other actions, that by January 1, 2008, the State Air Resources Board approve a statewide greenhouse gas emissions limit that is equivalent to the emissions level in 1990. This ordinance will further the State's efforts to reduce greenhouse gas emissions statewide by reducing San Francisco's emissions.

(xi) In 2007, Mayor Gavin Newsom established a Task Force on Green Building for the City and County of San Francisco comprised of ten members from San Francisco's ownership, developer, financial, architectural, engineering, and construction community. The mission of the Task Force was to advise and recommend to the City's policy makers mandates, incentives, education, and outreach in order to increase the number and improve the quality of green buildings in San Francisco and to assess the impacts of the Task Force's recommendations. The Task Force issued its Report and Recommendations in June 2007.

(xii) In its Report, the Green Building Task Force Report recommends that San Francisco take a leadership role in addressing environmental impacts, which include consumption of natural resources, accelerated effects on climate change, and increased pollution. It further recommends that San Francisco look at a broad range of policies and programs to improve sustainability and recognize that construction activity for and operational energy used by buildings are primary contributors to man-made $CO_2$ production and have significant other impacts on air quality, landfill, transportation, energy consumption, resource use, and occupant health and productivity. The Task Force Report states that it is essential that sustainable practices become standards of the building industry.

(xiii) By implementing the recommendations of the Mayor's Task Force on Green Building, this ordinance continues San Francisco's efforts to address environmental impacts in order to improve the health and economic well being of the City's residents, workers and visitors, and to mitigate the effects of global warming on the City's weather, water resources, physical landscape, ecosystem, human health, economy, and infrastructure.

Some of the significant cumulative benefits this ordinance is very conservatively expected to achieve through 2012 are: reducing $CO_2$ emissions by 60,000 tons, saving 220,000 megawatt hours of power, saving 100 million gallons of drinking water, reducing wastewater and stormwater by 90 million gallons of water, reducing construction and demolition waste by 700 million pounds, increasing the valuations of recycled materials by $200 million, reducing automobile trips by 540,000, and increasing green power generation by 37 thousand megawatt hours.

(xiv) Demolition of an existing building results in the loss of the energy and materials that were embodied in the original construction, and can result in the loss of a cultural resource as well. Demolition and new construction consumes still more energy and materials. Thus, a principle of green construction is that "the greenest building is the

one that already exists." Preservationists have estimated that it takes decades for an energy-efficient new building to conserve the amount of energy lost in demolishing an existing building, and that a green rehabilitation can greatly improve energy efficiency without compromising historic fabric and without the loss of embodied resources. Preservation, rehabilitation, and reuse of existing structures should be encouraged.

(c) Findings required by Public Resources Code Section 25402.1(h)(2) and Section 10-106 of the California Code of Regulations, Title 24, Part 1, Locally Adopted Energy Standards ("Section 10-106").

(i) Public Resources Code Section 25402.1(g) provides that the building department of every city, county, or city and county shall enforce Section 25402(a) and (b), Section 25402.1, and the rules and regulations of the California Energy Commission adopted pursuant thereto. Section 25402(a) requires the Commission to prescribe, by regulation, lighting, insulation climate control system, and other building design and construction standards that increase the efficiency in the use of energy for new residential and new nonresidential buildings. Section 25402(b) requires the Commission to prescribe, by regulation, performance-based energy conservation design standards for new residential and new nonresidential buildings.

(ii) Public Resources Code Section 25402.1(h)(2) and Section 10-106 authorize the adoption and enforcement of more stringent local energy standards, provided that the local jurisdiction makes a determination that the local standards are cost effective and will save more energy than the current Statewide standards and the local jurisdiction files an application for approval with the California Energy Commission together with documentation supporting the cost-effectiveness determination. A proposed ordinance may take effect only after the California Energy Commission has reviewed and formally approved the proposed local energy standards.

(iii) Based upon the findings of a study of this Ordinance performed by Gabel Associates LLC, the Board of Supervisors hereby determines that the Ordinance's

standards are cost effective and will save more energy than the current Statewide standards.

(iv) This Ordinance establishes increased minimum energy efficiency standards within the City and County of San Francisco for certain new construction, additions and alterations; and is intended to supplement the 2005 California Building Energy Efficiency Standards, as specified in California Code of Regulations, Title 24, Parts 1 and 6 ("2005 Standards. Compliance with the applicable California Building Energy Efficiency Standards is required even if the increased minimum energy efficiency standards specified in this Ordinance do not apply.

(v) On April 23, 2008, the California Energy Commission adopted California Building Energy Efficiency Standards, as specified in California Code of Regulations, Title 24, Parts 1 and 6, that are expected to go into effect on July 1, 2009 ("2008 Standards"). This will require the Board of Supervisors to make a determination that the local standards are cost effective and will save more energy than the 2008 Standards, file an application for reapproval of this Ordinance with the California Energy Commission together with documentation supporting the cost-effectiveness determination, and receive approval from the California Energy Commission prior to the effective date of the 2008 Standards in order for the Ordinance to remain in effect after July 1, 2009.

(vi) Given that the purpose of this Ordinance is to adopt stricter local energy efficiency standards for the construction of new buildings within the City and County of San Francisco, the Board of Supervisors recognizes that the adoption of new standards without additional education and training for City staff responsible for enforcement of the standards could diminish compliance and potentially undermine the efficacy of the Ordinance. Therefore, in order to ensure greater compliance and enforcement of the applicable green building standards, to better equip the staff of the Department of Building Inspection, and to provide a greater resource to the City's building community, the City and County of San Francisco will seek out additional education and training

opportunities for staff in green building technologies, including in the areas of energy standards, building energy technology and energy code implementation.

Section 2. The San Francisco Building Code is hereby amended by adding Chapter 13C, to read as follows:

Chapter 13C

GREEN BUILDING REQUIREMENTS

SECTION 1301C - INTENT

The purpose of this chapter is to promote the health, safety and welfare of San Francisco residents, workers, and visitors by minimizing the use and waste of energy, water and other resources in the construction and operation of the City and County of San Francisco's building stock and by providing a healthy indoor environment. The green building practices required by this chapter will also further the goal of reducing the greenhouse gas emissions in the City and County of San Francisco to 20 percent below 1990 levels by the year 2012, as stated in Board of Supervisors Resolution No. 158-02 and the City's 2004 Climate Action Plan.

SECTION 1302C - DEFINITIONS

For the purposes of this chapter, certain terms are defined as follows:

DEMOLITION means, where the existing building is determined to be an historical resource under the California Environmental Quality Act, proposed removal of sufficient material from an existing building to meet the definition in Planning Code Section 1005(f), or, where the existing building is determined not to be an historical resource under the California Environmental Quality Act, proposed removal of sufficient material from an existing building to meet the definition in Planning Code Section 317(b)(2), whether the occupancy of the existing building is residential or commercial.

GREENPOINT RATED, GREENPOINTS and GREENPOINTS CHECKLIST mean the residential green building rating system and checklist and certification methodology of the non-profit organization Build It Green.

HIGH-RISE BUILDING means a building that meets the definition of “high-rise building” in Section 202 of this Code.

HIGH-RISE RESIDENTIAL BUILDING means a Group R occupancy residential building that is a high-rise building.

HISTORICAL RESOURCE is a property that meets the terms of the definitions in Section 21084.1 of the CEQA Statute (The California Environmental Quality Act [Public Resources Code Section 21084.1]) and Section 15064.5 of the CEQA Guidelines, as determined by the San Francisco Planning Department.

LARGE COMMERCIAL BUILDING means a commercial building or addition of Group B or M occupancy that is 25,000 gross square feet or more or is a high-rise building.

LEED® and LEED® Checklist mean the Leadership in Energy and Environment Design rating system, certification methodology, and checklist of the United States Green Building Council (USGBC).

MAJOR ALTERATIONS means alterations where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed where areas of such construction are 25,000 gross square feet or more in Group B, M or R occupancies of existing buildings.

MID-SIZE COMMERCIAL BUILDING means a commercial building of Group B or M occupancy that is 5,000 or more and less than 25,000 gross square feet, and is not a high-rise building~~.~~

MID-SIZE RESIDENTIAL BUILDING means a Group R occupancy residential building that has five or more dwelling units and is not a high-rise building.

NEW LARGE COMMERCIAL INTERIORS means first-time tenant improvements where areas of such construction are over 25,000 gross square feet or more in Group B or M occupancy areas of existing buildings.

SMALL RESIDENTIAL BUILDING means a Group R occupancy building that has four or fewer dwelling units and is not a high-rise building

SECTION 1303C – SCOPE

Projects in the City and County of San Francisco that are within the scope of this chapter are: (1) newly constructed Group R occupancy buildings, (2) newly constructed commercial buildings of Group B or M occupancies that are 5,000 gross square feet or more, (3) new first-time build-outs of commercial interiors that are 25,000 gross square feet or more in buildings of Group B or M occupancies, and (4) major alterations that are 25,000 gross square feet or more in existing buildings of Group B, M or R occupancies, where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed.

Exempt from this chapter are (1) City and County of San Francisco projects, which are subject to Chapter 7 of the San Francisco Environment Code, (2) any new building in which laboratory use of any occupancy classification is the primary use, and (3) any building undergoing renovation in which the area of renovation will be primarily for laboratory use of any occupancy classification.

All buildings within the scope of this chapter must meet or exceed the energy requirements contained in the 2005 California Building Energy Efficiency Standards, including California Code of Regulations, Title 24, Parts 1 and 6, or the version of those standards that is applicable at the time a permit application is filed. If the increased minimum energy efficiency standards specified in this chapter do not apply, a project must comply with the applicable California Building Energy Efficiency Standards.

SECTION 1304C – GREEN BUILDING REQUIREMENTS

1304.0 Applicability. The following green building requirements shall apply to all projects within the scope of this chapter. Wherever reference is made to the LEED® or GreenPoint Rated systems, a comparable equivalent rating system may be used if approved by the Director. The applicable LEED®, GreenPoint Rated or equivalent

versions of performance standards for any applications subject to this chapter, regardless of application dates, are:

LEED® -CI v2.0 - LEED® for Commercial Interiors (June 2005)

LEED® -CS v2.0 - LEED® for Core and Shell (July 2006)

LEED® -NC v2.2 - LEED® for New Construction (July 2007)

GreenPoint Rated (GPR) – GPR v2007 (March 2007)

Wherever specific LEED® prerequisites or credits are cited, such references are to LEED® -NC v2.2. More recent LEED® and GreenPoint Rated versions may be used, provided the credits and points achieved are as or more stringent than LEED® -NC v2.2 or GPR v2007.

Wherever the LEED® or GreenPoint Rate systems include a minimum energy or other performance requirement, the permit applicant may choose to meet the minimum performance requirements with an alternative equivalent method approved by the Director.

1304C.0.1. Compliance. Compliance with any of these requirements may be verified and/or certified by any means, including third-party equivalent, as approved by the Director.

1304C.0.2. Solar electric systems. The installation of any solar photovoltaic energy system must meet all installation criteria the California Energy Commission's Guidebook "Eligibility Criteria and Conditions for Incentives for Solar Energy Systems." An energy credit from solar photovoltaic (PV) energy systems may be used to demonstrate compliance with the Ordinance's general compliance requirements. This credit is available if the solar PV energy system is capable of generating electricity from sunlight, supplying the electricity directly to the building, and the system is connected, through a reversible meter, to the utility grid. The methodology used to calculate the energy equivalent to the photovoltaic credit shall be the CECPV Calculator, using the most

recent version prior to the permit application date, which may be found on the web site of the California Energy Commission.

1304C.0.3. Stormwater. Stormwater management shall meet the "Best Management Practices" and "Stormwater Design Guidelines" of the San Francisco Public Utilities Commission, and shall meet or exceed the applicable LEED SS 6.1 and 6.2 guidelines.

1304C.0.4. Solid waste. Areas provided for recycling, composting and trash storage, collection and loading, including any chute systems, must be designed for equal convenience for all users to separate those three material streams, and must provide space to accommodate a sufficient quantity and type of containers to be compatible with current methods of collection.

1304C.0.5. Building demolition. Applications subject to this Section, whereby construction of a new building is proposed within five years of the demolition of a building on the site, where such demolition occurred after the effective date of this ordinance, shall be subject to the following requirements:

1304C.0.5.1. The sustainability requirements for new buildings pursuant to Sections 1304C.1, et seq. shall be increased as follows:

1304C.0.5.1.1. For projects attaining a LEED® certification and where the building demolished was an historical resource, the required points shall be increased by 10 percent of the total available in the required LEED® system. Where the building demolished was not an historical resource, the required points shall be increased by 10 percent of the total required of the applicable LEED certification requirements absent a demolition. For projects opting to be GreenPoint Rated, 25 additional points must be achieved, where the building demolished was an historical resource, or 20 additional points must be achieved where the building demolished was not an historical resource. The Director shall determine, on a case-by-case basis, increased requirements in similar proportions for projects achieving compliance using other green building rating systems.

For projects subject to 1304C.2.1, Mid-Size Commercial Buildings, and this Section 1304C.0.5, where the building demolished was not an historical resource, the following requirements apply:

The water use reduction required in 1304C.2.1.4 shall take effect on January 1, 2009, and permit applicants must submit documentation to verify that a minimum 30 percent reduction in the use of potable water was achieved. (LEED® WE3.2)

The enhanced commissioning required by Section 1304C.2.1.6 shall take effect January 1, 2010.

The energy generation or purchase required by Section 1304C.2.1.7 shall take effect January 1, 2011.

Effective January 1, 2012 permit applicants must submit documentation to verify achievement of one additional credit in accord with LEED® MR3, MR4, MR5, MR6, or MR7.

In addition to the above, where the building demolished was an historical resource, effective January 1, 2009 through January 1, 2011 permit applicants must submit documentation to verify achievement of one additional credit in accord with LEED® MR3, MR4, MR5, MR6, or MR7. Effective January 1, 2012, two additional credits in accord with LEED® MR3, MR4, MR5, MR6, or MR7 are required.

1304C.0.5.1.2. Except where the demolished building was determined to be an historical resource, if the occupant loads of the commercial portion of the replacement structure calculated in accord with Section 1004 of this Code and the number of dwellings in the residential portion are each tripled, for those buildings attaining LEED® certification, the required points shall be increased by 8 percent of the total points required absent a demolition. For such projects pursuant to demolitions opting to be GreenPoint Rated, 17 additional points must be achieved. Where occupant loads and residential density are quadrupled, the required points for projects attaining LEED® certification shall be increased by 6% of the total required absent a demolition, and for

those opting to be GreenPoint Rated, 15 additional points must be achieved. The Director shall determine, on a case-by-case basis, appropriate increased requirements in similar proportions for projects achieving compliance using other green building rating systems.

1304C.0.6. On-site retention of historical features. For alterations of buildings determined to be historical resources, additional points or credits shall be granted for retention and in-situ reuse or restoration of certain character defining features, as follos:

| SIGNIFICANT HISTORICAL ARCHITECTURAL FEATURES | PERCENT RETAINED * | LEED POINTS FOR RETENTION | GREENPOINTS FOR RETENTION |
|---|---|---|---|
| Windows @ principal façade(s) | At least 50 | 2 | 7 |
| Windows @ principal façade(s) | At least 75 | 3 | 11 |
| Windows @ principal façade(s) | 100 4 | | 15 |
| Other windows | At least 50 | 1 | 3 |
| Other windows | 100 | 2 | 6 |
| Exterior doors @ principal façade(s) | 100 1 | | 3 |
| Siding or wall finish @ principal façade(s) | 80 1 | | 4 |
| Trim & casing @ wall openings on principal façade(s) | 100 1 | | 3 |
| Roof cornices or decorative eaves visible from right-of-way | 100 1 | | 3 |
| Sub-cornices, belt courses, water tables, and running trim visible from right-of-way | 80 1 | | 3 |
| Character-defining elements of significant interior spaces | At least 50 | 2 | 7 |
| Character-defining elements of significant interior spaces | 100 4 | | 15 |
| Other exterior ornamentation (e.g. cartouches, corbels, quoins, etc.) visible from right-of-way | 80 1 | | 3 |

* Retention includes the rehabilitation and repair of character-defining features that conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties.

1304C.0.7 Maintenance of required features. Any structure subject to this chapter shall maintain the green building features required herein, regardless of subsequent alterations, additions, or changes of use, unless subject to more stringent requirements.

1304C.1. Requirements for New Group R Occupancy Buildings.

1304C.1.1. Small Residential Buildings. Upon the operative date of this chapter, the permit applicant must submit a GreenPoints New Home Construction Checklist but no points are required to be achieved. Effective January 1, 2009, applicants must submit documentation demonstrating that a minimum of 25 GreenPoints from the checklist will be achieved. Effective January 1, 2010 through 2011, a new building must be GreenPoint Rated and applicants must submit documentation demonstrating that a minimum of 50 GreenPoints from the checklist will be achieved. Effective January 1, 2012, a new building must be GreenPoint Rated and applicants must submit documentation demonstrating that a minimum of 75 GreenPoints from the checklist will be achieved.

1304C.1.2. Midsize Residential Buildings. Upon the operative date of this chapter, permit applicants must submit a GreenPoints Multifamily Checklist but no points are required to be achieved. Effective January 1, 2009, applicants must submit documentation demonstrating that a minimum of 25 GreenPoints from the checklist will be achieved. Effective January 1, 2010, a new building must be GreenPoint Rated and applicants must submit documentation demonstrating that a minimum of 50 GreenPoints from the checklist will be achieved. Effective January 1, 2011, a new building must be GreenPoint Rated and applicants must submit documentation demonstrating that a minimum of 75 GreenPoints from the checklist will be achieved.

1304C.1.3. High-Rise Residential Buildings.

1304C.1.3.1. Rating requirement. Upon the operative date of this chapter, permit applicants must submit documentation to achieve LEED® “Certified” certification. Effective January 1, 2010, applicants must submit documentation to achieve a LEED® “Silver” certification. Alternatively, GreenPoint Rated 50 points minimum may be achieved to meet this requirement upon the operative date of this ordinance, and GreenPoint Rated 75 points minimum effective January 1, 2010, providing all LEED®-NC Prerequisites are also met.

1304C.1.3.2. Water efficient landscaping. Upon the operative date of this chapter, permit applicants must submit documentation verifying that a minimum 50 percent reduction in use of potable water for landscaping was achieved. (LEED® WE1.1)

1304C.1.3.3. Water use reduction. Upon the operative date of this chapter, permit applicants must submit documentation demonstrating achievement of a minimum 20 percent reduction in the use of potable water. (LEED® WE3. 2) Effective January 1, 2011, the required reduction in use of water is 30 percent. (LEED® WE3.2)

1304C.1.3.4. Construction debris management. Effective January 1, 2009, permit applicants must submit documentation to verify that diversion of at least 75 percent of the project's construction debris was achieved. (LEED® MR2.2)

1304C.2. Requirements for New Group B and M Occupancy Buildings.

1304C.2.1. Mid-Size Commercial Buildings.

1304C.2.1.1. Rating requirement. Upon the operative date of this chapter, permit applicants must complete and submit a LEED® Checklist but no points are required to be achieved.

1304C.2.1.2. Fundamental commissioning of the building energy systems. Effective January 1, 2009, permit applicants must submit documentation prepared by a Commissioning Agent demonstrating compliance with LEED® EA Prereq 1.

1304C.2.1.3. Water efficient landscaping. Effective January 1, 2009, permit applicants must submit documentation verifying that a minimum 50 percent reduction in use of potable water for landscaping was achieved. (LEED® WE1.1)

1304C.2.1.4. Water use reduction. Effective January 1, 2009, and effective through 2010, permit applicants must submit documentation demonstrating achievement of a minimum 20 percent reduction in the use of potable water. (LEED® WE3.1) Effective January 1 2011, the required reduction in use of water is 30 percent. (LEED® WE3.2)

1304C.2.1.5. Construction debris management. Effective January 1, 2009, permit applicants must submit documentation to verify that diversion of at least 75 percent of the project's construction debris was achieved. (LEED® MR2.2)

1304C.2.1.6. Enhanced commissioning. Effective January 1, 2011, a new building must achieve enhanced commissioning. (LEED® EA3.0)

1304C.2.1.7~~8~~. Energy. Effective January 1, 2012, permit applicants must submit documentation to verify renewable on-site energy or purchase green energy credits in accord with LEED® EA2 or EA6.

1304C.2.2. New Large Commercial Buildings.

1304C.2.2.1. Rating requirement. Upon the operative date of this chapter, permit applicants must submit documentation to achieve LEED® "Certified" Certification. Effective January 1, 2009, permit applicants must submit documentation to achieve a LEED® Silver rating. Effective January 1, 2012, permit applicants must submit documentation to achieve a LEED® Gold rating.

1304C.2.2.2. Water efficient landscaping. Upon the operative date of this chapter, permit applicants must submit documentation verifying that a minimum 50 percent reduction in use of potable water for landscaping was achieved. (LEED® WE1.1)

1304C.2.2.3. Water use reduction. Upon the operative date of this chapter, permit applicants must submit documentation demonstrating achievement of a minimum 20 percent reduction in the use of potable water. (LEED® WE3.2) Effective January 1, 2011, the required reduction in use of potable water is 30 percent. (LEED® WE3.1)

1304C.2.2.4. Construction debris management. Upon the operative date of this chapter, permit applicants must submit documentation to verify that diversion of at least 75 percent of the project's construction debris was achieved. (LEED® MR2.2)

1304C.2.2.5. Enhanced commissioning. Effective January 1, 2010, a new building must achieve enhanced commissioning. (LEED® EA3.0)

1304C.2.2.6. Energy. Effective January 1, 2012, permit applicants must submit documentation to verify achievement of renewable on-site energy or purchase of green energy credits in accord with LEED® EA2 or EA6.

1304C.3. New Large Commercial Interiors and Major Alterations to Existing Buildings.

1304C.3.2.1. Rating requirement. Upon the operative date of this chapter, permit applicants for such construction~~,~~ must submit documentation to achieve LEED® "Certified" Certification. Effective January 1, 2009, applicants must submit documentation to achieve a LEED® Silver rating. Effective January 1, 2012, applicants must submit documentation to achieve a LEED® Gold rating.

1304C.3.2.2. Use of low-emitting materials. Upon the operative date of this chapter, permit applicants for alterations subject to this subsection must submit documentation to verify the use of low-emitting materials under LEED® EQ4.1, 4.2, and 4.3.

1305C - Implementation. Rules and regulations regarding the implementation of this chapter shall be detailed in an Administrative Bulletin to be prepared and issued by the Department of Building Inspection.

1306C - Hardship or Infeasibility Exemption

1306C.1. Exemption. If a permit applicant for a project believes that circumstances exist that make it a hardship or infeasible to meet fully the requirements of this chapter, the applicant may apply to the Director for an exemption as set forth below. In applying for an exemption, the burden is on the permit applicant to demonstrate hardship or infeasibility.

1306C.2. Application. A permit applicant seeking an exemption shall submit the following information in support of the application:

1. the maximum number of credits or other compliance that the permit applicant believes is practical or feasible

2. the circumstances that the permit applicant believes make it a hardship or infeasible to comply fully with this chapter. Such circumstances may include, but are not limited to, availability of markets for materials to be recycled, availability of green building materials and technologies, and compatibility of green building requirements with other regulations.

1306C.3. Granting an Exemption. If the Director determines that it is a hardship or infeasible for the applicant to meet fully the requirements of this chapter based on the information submitted with the application for an exemption, the Director shall determine the maximum feasible number of credits or other compliance reasonably achievable for the project and shall indicate this on the documentation submitted by the permit applicant. If an exemption is granted, the permit applicant must achieve the number of credits or compliance the Director determines to be achievable and shall comply with this chapter in all other respects.

1306C.4. Exemption for Historic Structure. The Director shall grant an exemption for an historic structure if the Director determines that compliance with certain requirements would impair the structure's historic integrity. The historic structure shall comply with this chapter in all other respects.

1306C.5. Denial of Exemption. If the Director determines that it is possible for the application to meet fully the requirements of this chapter, the Director shall notify the permit applicant in writing. The permit applicant must then submit all documentation required by Section 1304C. If the applicant does not submit the documentation within the time period required by Section 106A.3.7, or the documentation does not comply with the requirements of Section 1304C, the Director shall disapprove the building permit.

1307C - Appeal. Determinations of the Director related to this chapter are appealable to the Building Inspection Commission pursuant to the procedure set forth in Chapter 77 of the San Francisco Administrative Code. Denial of a building permit is

appealable to the Board of Appeals pursuant to the procedure set forth in Section 8 et seq. of the San Francisco Business and Tax Regulations Code.

1308C. Enforcement. The applicant's failure to build a project in accordance with approved construction documents and plans shall be subject to the procedures governing abatement of unsafe structures set forth in Section 102A of this Code. In addition, the Director may require other reasonable green building measures to mitigate the failure to comply fully with this chapter.

1309C. Conflict With Other Provisions of This or Other Codes. In the event that the requirements of this chapter conflict with other provisions of this Code or the other codes enforced by the Department of Building Inspection, the requirements of this chapter shall apply and the more restrictive building design standards of this or the other codes shall prevail.

1310C. Operative Date. This ordinance shall become operative 90 days after it is adopted by the Board of Supervisors and signed by the Mayor. If, however, the California Energy Commission has not approved the legislation by that time, this ordinance shall not become operative until the Energy Commission has approved it.

Section 3. The Clerk of the Board of Supervisors is hereby directed to forward this ordinance to the California Building Standards Commission upon final passage.

APPROVED AS TO FORM:
DENNIS J. HERRERA, City Attorney

By:
JUDITH A. BOYAJIAN
Deputy City Attorney